Amendments to the Drawings:

Please replace the existing Figure 4 with the amended Figure 4 as illustrated on the enclosed Replacement Sheet.

REMARKS

Applicants have amended claims 1, 4, 7, 10-11, 13, 18-19, and 25 as set forth above. In addition, Applicants have amended paragraphs [0008], [0013], [0016], [0022], and [0028] of the specification. Moreover, Applicants submit herewith a Replacement Sheet for Figure 4. No new matter has been added by way of these amendments. In view of the above amendments and the following remarks, reconsideration of the outstanding office action is respectfully requested.

The Office has objected to the drawings as failing to comply with 37 CFR 1.84(p)(5) because they included a reference character, 38, that was not mentioned in the description. In response, Applicants amend paragraph [0016] on page 5 of the Specification to include a reference to reference numeral 38. Accordingly, Applicants respectfully request that this objection be withdrawn.

In addition, the Office has objected to the drawings as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference signs mentioned in the description: 94(3) and 94(4). In response, Applicants submit herewith a Replacement Sheet replacing existing Figure 4 with a new Figure 4 that includes reference numerals 94(3) and 94(4). Accordingly, Applicants respectfully request that this objection be withdrawn.

Furthermore, the Office has objected to the disclosure because of various informalities. Applicants herein submit amended paragraph [0008] to replace "busses" with "buses", paragraph [0013] to replace "14(1)-14(7) with "14(1)-14(n)", paragraph [0022] to replace "device connection 33" with "device connection 33(1)", and paragraph [0028] to replace "outputs 59(1)-59(4)" with "outputs 59(1)-59(3)". Accordingly, Applicants respectfully request that these objections be withdrawn.

Moreover, the Office has objected to claims 4 and 18 for various informalities. Applicants herein amend claim 4 and claim 18 to correct these informalities. Accordingly, Applicants respectfully request that these objections be withdrawn.

In addition, the Office has rejected claims 7-12, 19, 23, 25, and 29 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. In particular, the Office asserts that claim 7 recites the limitation "the plurality of communication channels" in

line 4, "the devices" in line 5, "the device" in line 6, and "the communication channel" in lines 7-8, claim 8 recites "the plurality of communication channels" in lines 2-3, claim 9 recites "the plurality of communication channels" in line 2-3, claim 10 recites "the plurality of communication channels" in line 2 and "the devices" in line 3, claims 11 recites "the one device" and "the other devices" in line 3, and claim 12 recites "the plurality of communication channels" and "the device" in lines 2-3, and that there is insufficient antecedent basis for these limitation in the claims. Applicants have amended claims 7, 19, and 25 as set forth above to correct the above-stated issues and respectfully request that these rejections be withdrawn.

Furthermore, the Office has rejected claims 1, 6, 13, and 18-30 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,872,781 to Bennett et al. (Bennett). In addition, the Office has rejected claims 7-11 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,754,552 to Allmond et al. (Allmond). Moreover, the Office has rejected claims 2-5 and 14-15 under 35 U.S.C. 103(a) as being unpatentable over Bennett in view of Allmond. In addition, the Office has rejected claim 16 under 35 U.S.C. 103(a) as being unpatentable over Bennett in view of U.S. Patent 5,883,894 to Patel et al. (Patel). Also, the Office has rejected claim 17 under 35 U.S.C. 103(a) as being unpatentable over Bennett in view of Patel in further view of Allmond.

With respect to independent claims 1 and 13, the Office asserts that Bennett discloses a system and method for identifying one of a plurality of communication channels for communication with one of a plurality of devices, the method comprising monitoring each of the plurality of communication channels (fig. 2, item 34) for one or more link pulses for one of the devices (col. 6, lines 27-30); and establishing a connection to the device with the communication channel monitored to have the link pulses (col. 6, line 38).

With respect to independent claim 7, the Office asserts that Allmond discloses a computer readable medium (col. 6, lines 1-3) having stored therein instructions for providing network access, which when executed by one or more processors (fig. 1, item 107) causes the processors to perform monitoring each of the plurality of communication channels for one or more link pulses for one of the devices (col. 7, lines 14-15); and establishing a connection to the device with the communication channel monitored to have the link pulses (col. 8, line 28).

However, the teachings of Bennett, Almond, and Patel, taken either alone or in combination, do not teach or suggest a system, method, or computer readable medium capable of establishing "a connection between the device and the server using one of the available communication channels determined to have the link pulses" as is recited by independent claims 1, 7, and 13.

As described in Col. 6, lines 25-63, Bennett teaches that a data device transmits data or link pulses to the repeater. An interface circuit receives the data or link pulses and performs an auto-negotiation on the received data or link pulses to determine the communications protocol of the data device. Then, depending on which communications protocol is being used by the device, the interface circuit establishes a link with the data device using the appropriate communications protocol. Thus, Bennett merely teaches determining which protocol is being used based on a link pulse received from a data device, not using the determination of link pulses on a communication channel to establish a connection. In addition, the link pulses taught by Bennett are transmitted by a data device rather than a server, and thus cannot be used to determine availability of a communications channel because the transmission of detectable link pulses by a data device on a communications channel inherently implies that the communications channel is being used by the data device, which makes the determination of whether the communications channel is available to the data device irrelevant. Instead, the present invention teaches to detect the transmission of link pulses by the server to determine whether the communications channel is available prior to establishing a connection between a data device and the server using the communication channel.

Similarly, Allmond teaches an automatic communication protocol detection system and method for network systems for enabling a network system to detect and interface on or more network devices operating on different communication protocols. (Abstract). As described in Col. 7, lines 26-42, Allmond teaches that when a network device is plugged into the network, that device continually send link pulses. Transceivers operating on 10Base-T and 100Base-T protocols detect the link pulses from the devices and assert the signal to a processor. The processor then enables either the 10Base-T transceiver or the 100Base-T transceiver depending on the protocol of the network device. Thus, as with Bennett, Allmond merely teaches to establish a connection with a network device using the appropriate

protocol, not using the determination of link pulses on a communication channel to establish a connection on that channel.

Patel teaches a shared auto-negotiation logic for multiple port network devices wherein a shared auto-negotiation unit is coupled to a set of ports rather than implementing an auto-negotiation state machine in each of the ports. (See col. 4, lines 32-40). As with Allmond and Bennett, Patel generally relates to establishing connections of a device based on the communication protocol of the device, not using the determination of link pulses on a communication channel to establish a connection on that channel.

Contrary to the teachings of the references described above, claims 1, 7, and 13 of the present invention recite a system, method, and computer readable medium that enables identification of identifying at least one of a plurality of communication channels available for communication between one of a plurality of devices and a server. This is enabled by monitoring each of the plurality of communication channels between the plurality of devices and the server, determining whether at least one of the plurality of communication channels is being used for the transmission of link pulses by the server, wherein the presence of link pulses on one of the communication channels indicates that that particular communication channel is not currently being used for data transmission by the server and is available; and establishing a connection between the device and the server using one of the available communication channels determined to have the link pulses. These features provide a number of advantages over the teachings of the references, including enabling equipment in a network to be conveniently rearranged, added or removed as desired, enabling easier servicing of network communication buses since the buses need not be bundled together, lowers costs, and provides increased reliability since network equipment may be provided with a simple, universal interface arrangement.

With respect to independent claims 19 and 25, the Office asserts that Bennett discloses a system and method for coupling a plurality of devices together to a base unit, the method comprising providing a first plurality of substantially identical interface units, each of the interface units having a plurality of connectors (fig. 1, item 14; fig. 2, item 50); and coupling at least one of connector n in the plurality of connectors in one of the first plurality of interface units to a connector n+1 in the plurality of connectors in the interface unit in the first plurality of interface units which is immediately preceding and coupled closer to the base unit (fig. 2, items 50, 54, and 77).

However, Bennett does not teach a system or method for coupling a plurality of devices together to a base unit wherein "any of the devices in the plurality of devices is capable of establishing communication with the base unit via one or more available communication channels that extend from the base unit through the plurality of interface units" and "wherein communication between one of the devices with the base unit via one of the communication channels renders that communication channel unavailable" as recited by independent claims 19 and 25.

Instead, as described above, Bennett teaches an interface circuit that receives data or link pulses from a data device and performs an auto-negotiation on the received data or link pulses to determine the communications protocol of the data device. Then, depending on which communications protocol is being used by the device, the interface circuit communicates data received from the data device to either a first bus operating at one protocol or a second sub operating at a second protocol. (Col. 6, lines 40-49). There is no teaching whatsoever that "communication between one of the devices with the base unit via one of the communication channels renders that communication channel unavailable" as recited in independent claims 19 and 25.

Contrary to the teachings of Bennett, claims 19 and 25 of the present application recite a system and method for coupling a plurality of devices together to a base unit comprising a first plurality of substantially identical interface units, each of the first plurality of interface units having a plurality of connectors, at least one of connector n in the plurality of connectors in one of the first plurality of interface units is coupled to a connector n+1 in the plurality of connectors in the interface unit in the first plurality of interface units which is immediately preceding and coupled closer to the base unit, such that any of the devices in the plurality of devices is capable of establishing communication with the base unit via one or more available communication channels that extend from the base unit through the plurality of interface units, wherein communication between one of the devices with the base unit via one of the communication channels renders that communication channel unavailable. As stated above, these features provide a number of advantages over the teachings of the references, including enabling equipment in a network to be conveniently rearranged, added or removed as desired, enabling easier servicing of network communication buses since the buses need not be bundled together, lowers costs, and provides increased reliability since network equipment may be provided with a simple, universal interface arrangement.

In view of the foregoing amendments and remarks, the Office is respectfully requested to reconsider and withdraw the rejection of independent claims 1, 7, 13, 19, and 25. Since claims 2-6, 8-12, 14-18, 20-24, and 26-30 depend from and contain the limitations of claims 1, 7, 13, 19, and 25, they are distinguishable over the cited reference and patentable in the same manner.

In view of all of the foregoing, Applicants submit that this case is in condition for allowance and such allowance is earnestly solicited.

Respectfully submitted,

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Donald R. Studebaker
Registration No. 32,815

NIXON PEABODY LLP
c/o Gunnar G. Leinberg
Clinton Square, P.O. Box 31051
Rochester, New York 14603-1051
Telephone: (585) 263-1014
Facsimile: (585) 263-1600